

AMENDMENTS TO THE DRAWINGS

Replacement Sheet 1 showing Figure 1 labeled "Prior Art" is herein submitted.

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REMARKS

This amendment is responsive to the Office Action mailed on July 6, 2007, in the above-referenced matter. Claims 1-5, 7-19, and 21-23 stand rejected as obvious under 35 U.S.C. § 103(a) in view of Han (KR 10-2002-0021093), in view of Contevita (U.S. Patent No. 3,396,502), and Sachs et al. (U.S. Patent Publication No. 2002/0026764). Claims 6 and 20 stand rejected as obvious in further view of Lundmark (U.S. Patent No. 5,012,627). Claims 6 and 20 also stand rejected as indefinite under 35 U.S.C. § 112, second paragraph. Applicants respectfully traverse these rejections.

Han is also published as International Publication Number WO 03/089728, and as U.S. Patent Publication No. US 2005/0115164. For convenience, when discussing Han we will refer to the published U.S. application.

1.0 Drawing Objection

The Examiner objects to Figure 1 and correctly notes that Figure 1 should be designated as "Prior Art." Replacement sheet 1 is herein provided, correcting Figure 1 as indicated. This is believed to overcome this objection. The Examiner's assistance is greatly appreciated.

2.0 35 U.S.C. § 112 Rejection of Claims 6 and 20 for Indefiniteness

In support of the rejection under 35 U.S.C. § 112, the Office Action states on page 2 that Claims 6 and 20 "claim an inner form being at least two floors in height and the outer form being approximately one floor in height. It is unclear how this would work as the concrete when poured into the volume defined by the forms would overflow onto the peripheral structure."

The applicant respectfully disagrees. Claims 1 recites that the forms define "a volume that is adapted to receive a concrete pour" and "pouring concrete into the defined volume." This defined volume is clearly only up to the level of the lower form. This aspect of the invention and its advantages is discussed, beginning at page 10, line 7 of the current application:

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In the preferred embodiment, the outer forms 170 are approximately one floor in height, such that the outer forms 170 fit between neighboring beams 158. The inner forms 172 are preferably two floors in height. As seen most clearly in FIGURE 6, which shows a fragmentary side view of the concrete shear core 152 at an intermediate stage of construction, the outer forms 170 are preferably adapted to fit snugly between the concrete floor 162 of a lower level and the horizontal beam 158 of the next upper level. It will be appreciated by the skilled artisan that an advantage of the present method is that the outer forms 170 may be positioned after the concrete floor 162 has been poured, thereby facilitating placement of the outer forms 170.

The inner forms 172 may be moved, for example, with a hoist 80, to each desired location. A plurality of transverse connecting members 174 interconnects the outer form 170 with the inner form 172, to hold them in place during the concrete pour. It will also be appreciated that with the preferred embodiment of the present method, the inner forms 172 only need to be moved once for every tier of construction.

Therefore, the claimed construction allows for the larger inner forms (172) to be moved once for every tier (two floors), and the outer forms may be positioned after the concrete for each floor is poured.

In view of the claim language and the associated disclosure, Claims 6 and 20 are believed to be definite, and withdrawal of the rejection under 35 U.S.C. § 112 is requested.

3.0 Preassembled Steel Erection Structure

Claim 15, as originally filed, recites, in relevant part, "preassembling a plurality of steel erection segments, each steel erection segment having a first plurality of vertical columns, a first plurality of horizontal beams, and a plurality of steel reinforcing bars."

The preassembled steel erection segments are shown, for example, in Figure 3, which "shows a close-up front view of two floors of a partially-constructed concrete shear core 152, and approximately four floors of the steel erection structure 150 disposed thereabove. The steel erection structure 150 is made of a number of segments (four shown) that are preferably pre-assembled...." (Page 7, line 30 *et seq.*) This portion of the application goes on to describe the

preferred preassembled segments, including two or more vertical columns 156, attached to two or more horizontal beams 158, and including attached rebar screens 157.

None of the prior art cited in the Office Action teaches or suggests preassembling steel erection segments comprising columns, beams and reinforcing bars. The Office Action states at page 5:

Regarding claims 15, the additional method step of preassembling a plurality of steel erection segments is disclosed within the abstract of Han as step C, 'assembling the steel frame beam on the anchor-connecting member. This step is done before pouring concrete and integrating forms into the structure, therefore constitutes 'preassembling.'

The undersigned respectfully disagrees that assembling the columns and beams *in situ* can be considered 'preassembling,' as that term is used in the present application (as quoted above) or as that term is commonly understood. In Han, these elements are assembled, as noted in the quote from Han sited in the Office Action from the abstract of Han, "(c) assembling the steel frame beam on the anchor-connecting member." Han teaches directly away from the preassembled segments claimed and disclosed in the present application. At paragraph [0025] (from U.S. Patent Publication No. 2005/0115164) Han states:

As shown in the drawings a high rise building is constructed by firstly installing a steel-frame pillar 23 on a shaft portion of a core 21, and . . . then secondly a girder 25 and a steel-frame beam 31 are installed on the steel-frame pillar 23. Then, reinforcing bars for a slab 33 and a core 21 are arranged and concrete are applied.

Additionally, nothing in Han teaches or discloses preassembling a steel erection segment comprising columns, beams and reinforcing bars. Han does not teach or suggest preassembling a segment including steel reinforcing bars. As shown in the figures (and consistent with the related description), Han teaches reinforcing bars that are "arranged" in such a way that they are not attached to the pillar, girder or beam excepting through the concrete pour. Figure 3 of Han is the only figure that shows the reinforcing bars in the inventor's embodiment (Figure 1, though

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not labeled as such, is prior art) shows reinforcing bars (unnumbered) that are spaced from the pillars 23.

Compare this with Figure 3 of the present application, wherein preassembled segments 154 include columns 156, beams 158, and rebar screens 157. This novel construction provides many significant advantages over the prior art, as discussed in the present application, for example at page 10, line 21 *et seq.*:

The steel erection structure 150 of the present invention, therefore, simplifies the construction of the concrete shear core 152 for a number of independent reasons. The present method permits the steel framing and floors to proceed ahead of the concrete shear core 152. The placement of the rebar for the concrete shear core is simplified by pre-assembling the rebar onto the rigid segments 154. The rebar and steel erection structure 150 is two floors in height, reducing the number of rebar placements that must be made by approximately half, and reducing the number of rebar overlaps required.

We note that this aspect of the invention is also emphasized in the abstract, which discloses, "The steel erection structure is made from pre-assembled segments that include the steel reinforcing bar for the concrete shear core."

Nothing in the cited prior art discloses "preassembling a plurality of steel erection segments, each steel erection segment having a first plurality of vertical columns, a first plurality of horizontal beams, and a plurality of steel reinforcing bars," as recited in Claim 15. This claim is therefore believed to be patentably distinguishable from the prior art.

4.0 Preassembled Steel Erection Segments Each Liftable as a Unit

The pre-assembled steel erection segments are also disclosed and discussed at page 8, beginning at line 12, which discloses, "the pre-assembled segments 154 are intended to be lifted as a unit for placement during construction of the steel erection structure 150."

In order to further clarify in Claim 15 what is meant by preassembling the segments, i.e., that the preassembled segments comprising columns, beams, and reinforcing bars are each a

separate unit, Claim 15 is herein amended to recite, in relevant part: "wherein each of the plurality of preassembled steel erection segments is adapted to be lifted as a unit".

Nothing in the cited prior art discloses preassembled steel erection segments that are adapted to be lifted as a unit. For this additional reason, Claim 15 is believed to be in condition for allowance.

5.0 Claims 1 and 10

Independent Claims 1 and 10 are amended herein to clarify that the steel erection structure is formed from preassembled segments that include columns, beams, and rebar, and that each of the preassembled segments are adapted to be lifted as a unit. For example, Claim 1 is herein amended as follows, "erecting a steel erection subassembly for a concrete shear core, the steel erection subassembly including a plurality of preassembled segments, each preassembled segment comprising a first plurality of vertical columns, a first plurality of horizontal beams, and a rebar screen." Claims 1 and 10 are further amended to recite, "wherein each of the plurality of preassembled segments is adapted to be lifted as a unit."

Neither of these limitations are found in the cited prior art. Independent Claims 1 and 10 are therefore also believed to be patentably distinguishable from the prior art, and to be in condition for allowance for the reasons noted above.

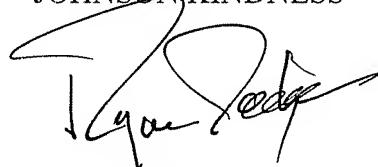
CONCLUSION

None of the cited prior art teaches or discloses preassembled steel erection subassemblies comprising columns, beams and reinforcing bars, as recited in Claim 15. Han appears to disclose assembling beams, and columns with an anchor above a portion of the core. However, Han does not teach or suggest forming preassembled segments comprising columns, beams, and reinforcing bars, each segment being adapted to be lifted as a unit. Claims 1-23, as amended

herein, are therefore believed to be patentably distinct over the prior art. Entry of the amendments and a favorable disposition are respectfully requested.

Respectfully submitted,

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